REMARKS

This is a full and timely response to the outstanding final Office Action mailed September 28, 2007 (Paper No. 20070918). Upon entry of this response, claims 1-33 are pending in the application. In this response, claims 1, 3-4, 6, 9, 12-20, and 22-23 have been amended. Claims 27-33 have been added. Applicants respectfully request that the amendments being filed herewith be entered and request reconsideration and allowance of all pending claims.

I.   Office Action Summary

It is noted that the Office Action Summary indicates that the Office Action is FINAL and that claims 1-26 are allowed. As rejections are presented for claims 1-26, Applicants will address the Examiner's rejections.

II.   Claim Rejections under 35 U.S.C. §103(a)

Claims 1-12 and 16-26 have been rejected under 35 U.S.C. § 103(a) as being unpatentable over *Huang* (U.S. Patent No. 7,020,138), hereafter "*Huang,*" in view of *Gundavelli* (U.S. Patent No. 6,795,403), hereafter "*Gundavelli*", and in further view of *Dobbins et al.* (U.S. Patent No. 6,711,171), hereafter "*Dobbins*", and *Koyanagi et al.* (U.S. Patent No. 7,187,658), hereafter "*Koyanagi.*" Claims 13-15 have been rejected under 35 U.S.C. § 103(a) as being unpatentable over *Huang* and *Gundavelli* in view of *Dobbins and* in further view of *Quarterman et al.* (U.S. Patent Application Pub. No. 2002/0177910), hereafter "*Quarterman.*" Applicants respectfully traverse this rejection as applied to pending claims 1-26.

The U.S. Patent and Trademark Office ("USPTO") has the burden under section 103 to establish a *prima facie* case of obviousness according to the factual inquiries expressed in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966). The four factual inquires, also expressed in MPEP 2100-116, are as follows:

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(A)   Determining the scope and contents of the prior art;

(B)   Ascertaining the differences between the prior art and the claims in issue;

(C)   Resolving the level of ordinary skill in the pertinent art; and

(D)   Evaluating evidence of secondary considerations.

Applicants respectfully submit that a *prima facie* case of obviousness is not established using the art of record.

A.   Independent Claim 1

Applicants' amended claim 1 provides as follows (emphasis added):

> A system for automatically discovering nodes on a network comprising:
>   ***announcer logic configured to transmit a first announcement packet to all known nodes having a static type in a list of known nodes***, the first announcement packet ***comprising a node address and a forward counter associated with each known node in the list having a corresponding forward count greater than zero, the forward counter initialized from the corresponding forward count***;
>   listener logic configured to receive a second announcement packet comprising a node address and a forward counter, the ***listener logic further configured to add to the list of known nodes a received node having a discovered type, the received node associated with the node address and a corresponding forward count defined by the decremented forward counter***, and
>   ***forwarder logic configured to transmit a third announcement packet to all known nodes in the list of known nodes when the forward count associated with the received node is greater than zero, the third announcement packet comprising*** the node address associated with the received node and ***a forward counter initialized from the forward count corresponding to the received node***.

Applicants respectfully request that the rejection of independent claim 1 be withdrawn for at least the reason that *Huang* in view of *Gundavelli* and in further view of *Dobbins* and *Koyanagi* fails to disclose, teach, or suggest at least the features recited and emphasized above in claim 1.

1.   *A first announcement packet ... comprising a node address and a forward counter associated with each known node in the list having a corresponding forward count greater than zero, the forward counter initialized from the corresponding forward count*

The Office Action alleges "Huang discloses ... an announcement packet (IP datagram including ICMP message, see col.4, ln.61), the announcement packet comprising a node address (IP address included within IP datagrams to a destination host, see col.4, ln.48-50) and a forward counter (TTL, see col.4, ln.48-61) to a destination node (24 fig.2; col.4, ln.48-61)" (Office Action, pages 2-3). The Office Action further states that "the examiner interprets the ICMP packet as an announcement packet" (Office Action, page 9). "To verify ICMP packet format comprising a node address and a forward counter, the examiner cites Koyanagi ... ICMP packets shown in Fig.23A, 23B, and 25A" (Office Action, page 4). However, *Huang* teaches the "head of an IP datagram includes a time-to-live (TTL) field ... When a router receives an IP datagram having a TTL field ..." (col. 4, lines 51-56). Thus, *Huang* teaches an IP datagram having a TTL field and not "a forward counter associated with each known node in the list." Although *Koyanagi* illustrates a TTL field in the IP header of a message packet, *Koyanagi **does not** mention TTL* in the specification, much less disclose "a forward counter associated with each known node in the list." In addition, neither *Gundavelli* nor *Dobbins* mention TTL. Thus, *Huang* in view of *Gundavelli* in further view of *Dobbins* and *Koyanagi* do not teach or suggest "a first announcement packet ... comprising a node address and a forward counter associated with each known node in the list" as recited in claim 1.

Even assuming, *arguendo*, that the destination address and TTL are associated, neither *Huang* nor *Koyanagi* teach or suggest "a forward counter associated with each known node in the list having a corresponding forward count greater than zero" as recited in claim 1. Nor do *Huang* or *Koyanagi* disclose the TTL "initialized from the corresponding forward count." Therefore, *Huang* in view of *Gundavelli* in further view of *Dobbins* and *Koyanagi* do not teach or suggest "a first announcement packet ... comprising a node address and a forward counter

associated with each known node in the list having a corresponding forward count greater than zero, the forward counter initialized from the corresponding forward count" as recited in claim 1.

2.   *Announcer logic configured to transmit a first announcement packet to all known nodes having a static type in a list of known nodes*

The Office Action alleges "Huang discloses ... an announcer logic (a logic, not shown, in hosts & routers fig.2) configured to transmit an announcement packet (IP datagram including ICMP message, see col.4, ln.61) ... to a destination node (24 fig.2; col.4, ln.48-61) associated with the node in a static type list" (Office Action, pages 2-3). The Office Action states that "Huang discloses an example of sending IP datagrams to one destination node in the static route list, but does not explicitly disclose the limitation of "to all nodes in the list having a static type" (Office Action, page 3). Rather, the Office Action appears to allege that this limitation corresponds to "Gundavelli explicitly discloses an automatic node discovery method by sending ICMP Echo request to all the IP addresses (col.2, ln.17-30)" (Office Action, page 3). However, *Gundavelli* teaches:

> Other systems carry out automatic discovery by sending ICMP Echo requests to all the IP addresses in the IP subnet range, or selectively to some active nodes by looking at the ARP cache on the hosts or on the routers. This approach is roughly equivalent to "pinging" all possible IP addresses in the IP subnet range. ...
>
> Unfortunately, such approaches essentially involve blind or brute force searching, and introduce significant ICMP message traffic and SNMP message traffic into the network. For example, there may be hundreds of messages required to identify one switch, e.g., if the subnet range is 255 IP addresses, then 255 packets may be required. ...

(*Gundavelli*, col. 2, lines 17-35). Thus, *Gundavelli* discloses transmitting IP packets to IP addresses in an IP subnet range and *not* transmitting "a first announcement packet *to all known nodes having a static type in a list of known nodes*" as recited in claim 1. The addition of *Dobbins* and *Koyanagi* does not overcome this deficiency. Therefore, *Huang* in view of *Gundavelli* in further view of *Dobbins* and *Koyanagi* do not teach or suggest "announcer logic

configured to transmit a first announcement packet to all known nodes having a static type in a list of known nodes" as recited in claim 1.

3. ***Listener logic further configured to add to the list of known nodes a received node having a discovered type, the received node associated with the node address and a corresponding forward count defined by the decremented forward counter***

The Office Action alleges "Huang discloses ... a listener logic (a logic, not shown, in hosts & routers fig.2) ... further configured to add at least one new node (find a series of routers, see col.3, ln.37-39)" (Office Action, pages 2-3). *Huang* discloses "The system finds a series of routes that can be effectively connected and past from the sending host to the destination host. The Internet protocol (IP) addresses of the series of routers are successively put into a list" (col. 3, lines 37-40)" (Office Action, page 3). However, *Huang* does not teach or suggest "the received node associated with ... a corresponding forward count defined by the decremented forward counter" as recited in claim 1. The addition of *Gundavelli*, *Dobbins*, and *Koyanagi* does not overcome this deficiency. Therefore, *Huang* in view of *Gundavelli* in further view of *Dobbins* and *Koyanagi* do not teach or suggest "listener logic further configured to add to the list of known nodes a received node having a discovered type, the received node associated with the node address and a corresponding forward count defined by the decremented forward counter" as recited in claim 1.

4. ***Forwarder logic configured to transmit a third announcement packet to all known nodes in the list of known nodes when the forward count associated with the received node is greater than zero, the third announcement packet comprising ... a forward counter initialized from the forward count corresponding to the received node***

The Office Action states that "Huang ... lacks what Dobbins discloses 'a forwarder logic (a logic, not shown, in IP routers fig.21) configured to transmit the node address and the forward counter associated with the new node (advertise by using RIP or OSPF, see col.24, ln.22-24; IP address and Hop, see routing tables in col. 24), to all known nodes in the list (routing tables, see col.24)" (Office Action, page 3). However, *Dobbins* teaches "Srvr 1 and Srvr2 advertise the

reachability of their internal networks using RIP. Srvr1's internal net is 0x0011111 and Svr2's is 0x00222222. SW1 receives and floods these RIP advertisements separately and then updates them into its RIP table (shown below)" (col. 22, lines 21-26). *Dobbins* **does not** teach or suggest transmitting "a third announcement packet to all known nodes in the list of known nodes when the forward count associated with the received node is greater than zero" as recited in claim 1. The addition of *Gundavelli* and *Koyanagi* does not overcome this deficiency. Thus, *Huang* in view of *Gundavelli* in further view of *Dobbins* and *Koyanagi* do not teach or suggest "forwarder logic configured to transmit a third announcement packet to all known nodes in the list of known nodes when the forward count associated with the received node is greater than zero" as recited in claim 1.

In addition, for the same reasons as discussed above in section II.A.1 above, *Huang* in view of *Gundavelli* in further view of *Dobbins* and *Koyanagi* do not disclose "the third announcement packet comprising ... a forward counter initialized from the forward count corresponding to the received node." Therefore, *Huang* in view of *Gundavelli* in further view of *Dobbins* and *Koyanagi* do not teach or suggest "forwarder logic configured to transmit a third announcement packet to all known nodes in the list of known nodes when the forward count associated with the received node is greater than zero, the third announcement packet comprising ... a forward counter initialized from the forward count corresponding to the received node" as recited in claim 1.

5. Summary

For at least the reasons described above, *Huang* in view of *Gundavelli* in further view of *Dobbins* and *Koyanagi* fails to disclose, teach or suggest all of the features recited in claim 1. Therefore, Applicants respectfully submit that the rejection of claim 1 be withdrawn.

B.   Dependent Claims 2-8

Because independent claim 1 is allowable over *Huang* in view of *Gundavelli* in further

view of *Dobbins* and *Koyanagi*, Applicants respectfully submit that claims 2-8 are allowable for at

least the reason that each depends from an allowable claim. *In re Fine*, 837 F.2d 1071,

5 U.S.P.Q. 2d 1596, 1598 (Fed. Cir. 1988). Therefore, Applicants respectfully request that the

rejection of claims 2-8 be withdrawn.

C.   Independent Claim 9

Applicants' amended claim 9 provides as follows (emphasis added):

> A method for automatically discovering nodes on a network comprising:
>   initializing a first known node list;
>   transmitting *a first announcement packet* to all known nodes in the
> first list, *the first announcement packet comprising a node address
> and a forward counter associated with each known node having a
> corresponding forward count greater than zero, the forward counter
> initialized from the corresponding forward count,*
>   receiving from the network a second announcement packet, the
> second announcement packet comprising a node address and a forward
> counter associated with a discovered node;
>   *adding to a second list of discovered nodes the discovered
> node, where the discovered node is associated with a forward count
> defined by the decremented forward counter,* and
>   *transmitting a third announcement packet to all known nodes in
> the first list and all discovered nodes in the second list when the
> forward count associated with the discovered node is greater than
> zero, the third announcement packet comprising* the node address
> associated with the discovered node and *a forward counter initialized
> from the forward count associated with the discovered node.*

Applicants respectfully request that the rejection of independent claim 9 be withdrawn for at

least the reason that *Huang* in view of *Gundavelli* and in further view of *Dobbins* and *Koyanagi*

fails to disclose, teach, or suggest at least the features recited and emphasized above in claim

9.

1. ***A first announcement packet ... comprising a node address and a forward counter associated with each known node having a corresponding forward count greater than zero, the forward counter initialized from the corresponding forward count***

The Office Action alleges "Regarding claim 9, it is a claim corresponding to claim 1, ... and is therefore rejected for the similar reasons set forth in the rejection of claim 1" (Office Action, page 5). Therefore, for the same reasons as discussed above in section II.A.1 above (in reference to claim 1), *Huang* in view of *Gundavelli* in further view of *Dobbins* and *Koyanagi* do not disclose "a first announcement packet ... comprising a node address and a forward counter associated with each known node having a corresponding forward count greater than zero, the forward counter initialized from the corresponding forward count" as recited in claim 9.

2. ***Adding to a second list of discovered nodes the discovered node, where the discovered node is associated with a forward count defined by the decremented forward counter***

The Office Action alleges "Regarding claim 9, it is a claim corresponding to claim 1, ... and is therefore rejected for the similar reasons set forth in the rejection of claim 1" (Office Action, page 5). Therefore, for the same reasons as discussed above in section II.A.3 above (in reference to claim 1), *Huang* does not teach or suggest "the discovered node is associated with a forward count defined by the decremented forward counter" as recited in claim 9. The addition of *Gundavelli, Dobbins,* and *Koyanagi* does not overcome this deficiency. Thus, *Huang* in view of *Gundavelli* in further view of *Dobbins* and *Koyanagi* do not disclose "adding to a second list of discovered nodes the discovered node, where the discovered node is associated with a forward count defined by the decremented forward counter" as recited in claim 9.

3. ***Transmitting a third announcement packet to all known nodes in the first list and all discovered nodes in the second list when the forward count associated with the discovered node is greater than zero, the third announcement packet comprising ... a forward counter initialized from the forward count associated with the discovered node***

The Office Action alleges "Regarding claim 9, it is a claim corresponding to claim 1, ... and is therefore rejected for the similar reasons set forth in the rejection of claim 1" (Office

Action, page 5). Therefore, for the same reasons as discussed above in section II.A.4 above (in reference to claim 1), *Dobbins* **does not** teach or suggest "transmitting a third announcement packet to all known nodes in the first list and all discovered nodes in the second list when the forward count associated with the discovered node is greater than zero." The addition of *Gundavelli* and *Koyanagi* does not overcome this deficiency. Thus, *Huang* in view of *Gundavelli* in further view of *Dobbins* and *Koyanagi* do not teach or suggest "transmitting a third announcement packet to all known nodes in the first list and all discovered nodes in the second list when the forward count associated with the discovered node is greater than zero" as recited in claim 9.

In addition, for the same reasons as discussed above in section II.A.1 above (in reference to claim 1), *Huang* in view of *Gundavelli* in further view of *Dobbins* and *Koyanagi* do not disclose "the third announcement packet comprising ... a forward counter initialized from the forward count associated with the discovered node." Therefore, *Huang* in view of *Gundavelli* in further view of *Dobbins* and *Koyanagi* do not teach or suggest "Transmitting a third announcement packet to all known nodes in the first list and all discovered nodes in the second list when the forward count associated with the discovered node is greater than zero, the third announcement packet comprising ... a forward counter initialized from the forward count associated with the discovered node" as recited in claim 9.

4. Summary

For at least the reasons described above, *Huang* in view of *Gundavelli* in further view of *Dobbins* and *Koyanagi* fails to disclose, teach or suggest all of the features recited in claim 9. Therefore, Applicants respectfully submit that the rejection of claim 9 be withdrawn.

D. Dependent Claims 10-12

Because independent claim 9 is allowable over *Huang* in view of *Gundavelli* in further view of *Dobbins* and *Koyanagi*, Applicants respectfully submit that claims 10-12 are allowable for

at least the reason that each depends from an allowable claim. *In re Fine*, 837 F.2d 1071,

5 U.S.P.Q. 2d 1596, 1598 (Fed. Cir. 1988). Therefore, Applicants respectfully request that the

rejection of claims 10-12 be withdrawn.

E.   Independent Claim 16

Applicants' amended claim 16 provides as follows (emphasis added):

> A system for automatically discovering nodes on a network comprising:
>   a list of static nodes, wherein each static node comprises a node address and a corresponding forward count;
>   ***announcer logic configured to transmit to all static nodes the node address of each static node in the list having a corresponding forward count greater than zero and a corresponding forward counter initialized from the corresponding forward count;***
>   a list of discovered nodes, wherein each discovered node comprises a node address and a corresponding forward count;
>   listener logic configured to receive an announcement packet comprising at least one node address and at least one corresponding forward counter, the ***listener logic further configured to add to the list of discovered nodes at least one discovered node comprising the at least one node address and a corresponding forward count defined by the decremented at least one corresponding forward counter of the announcement packet;*** and
>   ***forwarder logic configured to transmit to all static nodes and to all discovered nodes,*** via the network interface, ***the node address of the at least one discovered node and a corresponding forward counter initialized from the corresponding forward count when the corresponding forward count is greater than zero.***

Applicants respectfully request that the rejection of independent claim 16 be withdrawn for at

least the reason that *Huang* in view of *Gundavelli* and in further view of *Dobbins* and *Koyanagi*

fails to disclose, teach, or suggest at least the features recited and emphasized above in claim

16.

> ### 1.   *Announcer logic configured to transmit to all static nodes the node address of each static node in the list having a corresponding forward count greater than zero and a corresponding forward counter initialized from the corresponding forward count*

The Office Action alleges "Regarding claim 16, it is a claim corresponding to combination

of claims 1, 4, & 5, ... this claim is rejected for the similar reasons set forth in the rejection of

claim 1" (Office Action, page 6). Therefore, for the same reasons as discussed above in section

II.A.2 above (in reference to claim 1), *Gundavelli* discloses transmitting IP packets to IP addresses in an IP subnet range and *not* transmitting "*to all static nodes* the node address of each static node in the list having a corresponding forward count greater than zero and a corresponding forward counter" of static nodes as recited in claim 16. The addition of *Dobbins* and *Koyanagi* does not overcome this deficiency. Therefore, *Huang* in view of *Gundavelli* in further view of *Dobbins* and *Koyanagi* do not teach or suggest "announcer logic configured to transmit the node address and the corresponding forward counter associated with each static node in the list to all static nodes in the list" as recited in claim 16. In addition, for the same reasons as discussed above in section II.A.1 above (in reference to claim 1), *Huang, Gundavelli, Dobbins*, and *Koyanagi* **do not** disclose "a corresponding forward counter initialized from the corresponding forward count." Therefore, *Huang* in view of *Gundavelli* in further view of *Dobbins* and *Koyanagi* do not teach or suggest "announcer logic configured to transmit to all static nodes the node address of each static node in the list having a corresponding forward count greater than zero and a corresponding forward counter initialized from the corresponding forward count" as recited in claim 16.

2. **Listener logic further configured to add to the list of discovered nodes at least one discovered node comprising the at least one node address and a corresponding forward count defined by the decremented at least one corresponding forward counter of the announcement packet**

The Office Action alleges "Regarding claim 16, it is a claim corresponding to combination of claims 1, 4, & 5, ... this claim is rejected for the similar reasons set forth in the rejection of claim 1" (Office Action, page 6). Therefore, for the same reasons as discussed above in section II.A.3 above (in reference to claim 1), *Huang* does not teach or suggest "at least one discovered node comprising ... a corresponding forward count defined by the decremented at least one corresponding forward counter of the announcement packet" as recited in claim 16. The addition of *Gundavelli, Dobbins*, and *Koyanagi* does not overcome this deficiency. Thus, *Huang* in

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view of *Gundavelli* in further view of *Dobbins* and *Koyanagi* do not disclose "listener logic further

configured to add to the list of discovered nodes at least one discovered node comprising the at

least one node address and a corresponding forward count defined by the decremented at least

one corresponding forward counter of the announcement packet" as recited in claim 16.

> 3. ***Forwarder logic configured to transmit to all static nodes and to all
> discovered nodes ... the node address of the at least one discovered
> node and a corresponding forward counter initialized from the
> corresponding forward count when the corresponding forward
> count is greater than zero***

The Office Action alleges "Regarding claim 16, it is a claim corresponding to combination

of claims 1, 4, & 5, ... this claim is rejected for the similar reasons set forth in the rejection of

claim 1" (Office Action, page 6).

Therefore, for the same reasons as discussed above in section II.A.4 above (in reference

to claim 1), *Dobbins **does not*** teach or suggest transmitting "to all static nodes and to all

discovered nodes ... the node address of the at least one discovered node and a corresponding

forward counter ... when the corresponding forward count is greater than zero." The addition of

Gundavelli and *Koyanagi* does not overcome this deficiency. Thus, *Huang* in view of *Gundavelli* in

further view of *Dobbins* and *Koyanagi* do not teach or suggest transmitting "to all static nodes

and to all discovered nodes ... the node address of the at least one discovered node and a

corresponding forward counter ... when the corresponding forward count is greater than zero"

as recited in claim 16.

In addition, for the same reasons as discussed above in section II.A.1 above (in reference

to claim 1), *Huang* in view of *Gundavelli* in further view of *Dobbins* and *Koyanagi* do not disclose "a

corresponding forward counter initialized from the corresponding forward count." Therefore,

Huang in view of *Gundavelli* in further view of *Dobbins* and *Koyanagi* do not teach or suggest

"forwarder logic configured to transmit to all static nodes and to all discovered nodes ... the

node address of the at least one discovered node and a corresponding forward counter

initialized from the corresponding forward count when the corresponding forward count is greater than zero" as recited in claim 16.

4.   Summary

For at least the reasons described above, *Huang* in view of *Gundavelli* in further view of *Dobbins* and *Koyanagi* fails to disclose, teach or suggest all of the features recited in claim 16. Therefore, Applicants respectfully submit that the rejection of claim 16 be withdrawn.

F.   Dependent Claims 17-26

Because independent claim 16 is allowable over *Huang* in view of *Gundavelli* in further view of *Dobbins* and *Koyanagi*, Applicants respectfully submit that claims 17-26 are allowable for at least the reason that each depends from an allowable claim. *In re Fine*, 837 F.2d 1071, 5 U.S.P.Q. 2d 1596, 1598 (Fed. Cir. 1988). Therefore, Applicants respectfully request that the rejection of claims 17-26 be withdrawn.

G.   Dependent Claims 13-15

For the reasons discussed in section II.C above, *Huang* in view of *Gundavelli* in further view of *Dobbins* does not teach or suggest all of the elements of independent claim 9. The addition of *Quarterman* does not overcome these deficiencies. Because independent claim 9 is allowable over *Huang* and *Gundavelli* in view of *Dobbins* in further view of *Quarterman*, Applicants respectfully submit that claims 13-15 are allowable for at least the reason that each directly or indirectly depends from an allowable claim. *In re Fine*, 837 F.2d 1071, 5 U.S.P.Q. 2d 1596, 1598 (Fed. Cir. 1988). Therefore, Applicants respectfully request that the rejection of claims 13-15 be withdrawn.
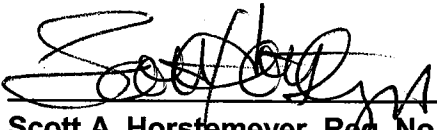
III.   Newly Added Claims

New claims 27-33 are based on subject matter that is explicit and/or inherent within the description of the specification and/or the drawings. Applicants submit that no new matter has been added in the new claims 27-33 and that new claims 27-33 are allowable over the cited

references. Therefore, Applicants request the Examiner to enter and allow the above new claims.

<div align="center"><u>CONCLUSION</u></div>

Applicants respectfully request that all outstanding objections and rejections be withdrawn and that this application and presently pending claims 1-33 be allowed to issue. Any statements in the Office Action that are not explicitly addressed herein are not intended to be admitted. In addition, any and all findings of inherency are traversed as not having been shown to be necessarily present. Furthermore, any and all findings of well-known art and official notice, or statements interpreted similarly, should not be considered well known since the Office Action does not include specific factual findings predicated on sound technical and scientific reasoning to support such conclusions. If the Examiner has any questions or comments regarding Applicants' response, the Examiner is encouraged to telephone Applicants' undersigned counsel.

Respectfully submitted,

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